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ABSTRACT

Technical writing instructors generally agree about the absolute need for communication skills throughout the technological work place, but a survey of technical writing journal articles shows a lack of focus on ways to address business's needs for on-the-job literacy. One major advance within the profession in recent years has been the development of university programs to prepare students for careers as technical communicators. Programs build from a basic technical writing course that usually follows one or two courses in fundamentals of English grammar and composition. The broader interdisciplinary field of technical communication stresses collaborative writing assignments, the entire technical publication process, and the incorporation of oral or visual communication components. The foundation of a technical communication program is still the introductory class in technical writing or report writing, often required by various technical and scientific disciplines as part of their degree programs, and the only opportunity writing instructors have to improve the skills of the nonmajors. Some professionals argue that English departments should work with industry to plan "specialized practical writing courses," while others argue that discrete courses in business writing or other kinds of professional writing are outmoded. Basic technical writing courses should emphasize those common rhetorical principles that underlie the design and development of all writing. Meanwhile, a new response to the serious literacy problem across the country is gaining attention: American business taking on the responsibility for literacy, with the corporate school becoming almost as extensive as the traditional university system. (Twenty endnotes are appended.) (NKA)

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TECHNICAL WRITING 1987: GALLOPING OFF IN AT LEAST TWO DIRECTIONS

Critics have recently attacked the traditional educational establishment for consistently failing to deliver quality education. They point to rising costs, falling productivity, and the failure of the education establishment to do much more to solve its problem than ask for more money. Indeed, costs are up so much that Secretary of Education William Bennett suggests that "there ought to be a 'college cost containment' to match 'hospital cost containment.'" (12)

In 1984, the Carnegie Foundation for the Advancement of Teaching reported that corporate America now spends more than $40 billion annually to train, retrain, and educate its employees only partly because of the technological revolution; more important for us, employees in all areas of the work force lack the basic skills to perform adequately on the job.(2) Peter Brinelow cites a Navy study stating that 25% of Navy recruits in the early 1980's could not read at the ninth grade level, the minimum to read safety instructions. Furthermore, the National Assessment of Educational Progress (NAEP) reading test results for 1983-84 showed that "only 39.2% of 17-year-olds [could read] at a level appropriate for their age . . ," a smaller proportion than went on to college. (3) Labor Secretary John Brock makes the worst case of the situation: "We are building a huge glob of permanently unemployed that's going to bubble up through the demographic charts for thirty years--people who lack the education and skill to hold any job. They number in the high hundreds of thousands at the moment, but it will be in the low

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millions in the near term."(4)

Complaints about the quality of writing in the workplace aren't limited to formal reports out of Washington and Wall Street. Among the results of a 1982 survey of 595 engineering graduates of the University of California, Berkeley, was this comment: "Only one in five of the engineers we employ have adequate ability in oral and written communication."(5)

As someone teaching out in the corporate classroom, I am regularly reminded that inability to write easily and well is a constant drag in day-to-day on-the-job activities, and I wanted to find out how technical writing faculties are responding to the problem. My experience has been that English departments do not as a rule respond actively to on-the-job problems except for the technical or professional writing instructors. We generally agree that there is an absolute need for communication skills throughout the technological workplace. Our difficulty is not that we don't recognize the need to improve on- the-job writing skills, it is rather where or how to confront the problem.

To determine whether the profession is moving toward a consensus for improving students' skills, I surveyed articles on the curriculum published during the past five years in The Technical Writing Teacher, Technical Communication, and the Journal of Technical Writing and Communication. Articles published in our technical writing journals show that we do try to address business' needs, but we lack focus.

As was true when I came into the profession over ten years ago, we have at least three types of students in our classes whose needs should be met:

--the English major who plans to become a professional technical writer,

--the engineering major who plans to become a professional technical writer, and

--the student from any number of disciplines (accountant, engineer, agricultural extension agent) who will need to write as part of her professional responsibilities.

Perhaps it is this very multitude of needs that causes our problems: we direct our attention to only one group or our sense of purpose blurs as we try to use one class to meet the needs of all.

DIVISIONS WITHIN THE PROFESSION

First, we have no single, coherent definition of ourselves.

Carolyn Miller says

"What could once be called 'engineering English' has now been broadened to 'professional writing'; what was once a firm and possibly valid distinction between technical writing and business writing has eroded; what was once an adjunct to professional education in technical and scientific fields has become, in addition, a profession in itself." (6)

My review of the literature agrees with Miller's. From that definition I think we can also see the directions we seem to be taking:

First, there are the programs (could be options, minors, or degrees) for professional technical communicators. Second, there are the professional writing courses (courses for engineers, agricultural extension agents, accountants); the courses that have developed from 'engineering English.'

Because time is limited, I've taken two major surveys of what we are presently doing as fairly accurate pictures of our curricula. First, the major advances within the profession in recent years has been the development of university programs to prepare students for careers as technical communicators. Gilbert Storms' 1984 review, "Programs in Technical Communication," argues that these programs should be more than training in basic writing and editing skills. Rather, they should "prepare students for careers in our field." Both two- and four-year programs build from a basic technical writing course which usually follows one or two courses in

fundamentals of English grammar and composition (Freshman English, no doubt) and then typically one or more additional writing or editing courses are required. One distinction between technical communication programs is that some, "emphasizing writing and editing skills, seem designed . . . to prepare graduates only for entry level positions as writers and editors who will communicate in only one medium -- print." Others prepare for the longer term. They include managerial tasks, oral and graphic communication, and computer skills. (7) Note the common requirement for the basic technical writing course. It seems to be serving both major and nonmajor.

Victoria Winkler and Jeanne Mizuno surveyed the range of advanced technical writing courses taught across the country. Most advanced courses do one of two things: "either [they] meet the needs of the students from different disciplines that we teach or [they] 'round out' the course offerings in technical writing programs." Winkler and Mizuno group the courses into four general categories.

1. Genre courses--specialized writing courses for documentation, proposal writing, newsletter writing, etc.

2. General Communication courses -- dealing with various parts of the entire communication process: editing; publication processes; graphics, layout and design; and integrating oral communication in the writing classroom.

3. Courses on the history or theory of rhetoric or the literature of science.

4. Courses using special pedagogical techniques or focusing on a certain aspect of technical communication. (8)

A major consideration for Winkler and Mizuno was whether or not to limit the survey to writing courses or to consider courses in the broader interdisciplinary field of technical communication. The broader range they finally chose emphasizes the trend toward programs for professional technical communicators:

> In summary, [they write] most of the advanced technical communication courses stressed team work and collaborative writing assignments. They familiarized students with the entire technical publication process and the various review stages built into the process, and they gave students practice in using copyediting and proofreading marks and in using style sheets. Researching, planning a document, and writing on demand were stressed. Many of these courses provided students with a knowledge and some practice with word processing as a tool for communicators. The more progressive classes were going beyond simple word processing and viewing the technology as a medium of communication as well as a tool. Nearly every course incorporated oral or visual communication components. Likewise, cooperative ventures with professionalism in business and industry were encouraged and sometimes part of the coursework.(9)

The skills taught here are all needed by the professional technical communicator. Only the last two characteristics -- The need for oral and visual communication skills and cooperative ventures with business and industry -- seem to apply equally to courses for nonmajors. The need for competent technical communicators is unarguable, but what about my graduate engineers and middle management professional continuing education students?

SERVICE COURSES

Of course, we still teach the basic service course. Storms points out that courses in written communication are the foundation of the technical communication program. As he says, an introductory class in technical writing or report writing, usually on the junior or senior level, is common to most programs. "[This course] does not usually treat basics of English grammar or composition, but focuses on writing strategies useful to technical communicators -- determining one's purpose and audience; gathering, selecting, and arranging information; drafting and revising prose. . . ." (10) That course, often required by various technical and scientific disciplines as part of their degree programs, is usually our last opportunity to improve the communication skills of the nonmajor.

As part of her survey of 150 engineering colleges in the United States, Helen M. Loeb asked if writing courses are included in engineering college curricula, what kinds and levels of writing courses are taught, and if the courses are judged successful. Indeed, as Loeb explains, the Accreditation Board for Engineering and Technology (ABET) in its Criteria for Accrediting Programs in Engineering in the United States (1982), states "Competency in oral and written communication in the English language is considered by ABET to be essential for the engineering graduate."(11)

Of the 98 schools that responded, 94 included writing courses in the engineering curriculum: 79.6% require freshman composition and 45.9% require technical writing. A majority of the faculty at responding schools (67.3%) believe that writing courses are 'extremely important'; another 27.6% believe that they are 'important.'(12)

What we are doing in courses like these--service courses and advanced courses for non writing majors--is more specific to the problem defined by Bennett, Brock, the Carnegie Foundation, and Forbes, but my survey turned up no consistent trend or direction for dealing with the problem they describe. We most often discuss a teaching technique or a method for dealing with one on-the-job writing requirement. How do we reconcile our objectives if the basic technical writing course is both the foundation for programs for professional technical writers and the one opportunity in professional writing for nonmajors? Can we coordinate the needs of majors and nonmajors in a three-credit course?

POSSIBLE DIRECTIONS

Barbara Couture argues that English departments should work with industry to plan "Specialized practical writing courses, such as legal

writing, scientific writing, and technical writing, [which] often cover a specialized array of workplace writing tasks . . . ." This approach would help us get at specific local problems at least. Since English departments often let "a scholarly concern with language and its uses [take] precedence over the teaching of technical, managerial, and other skills. . , collaboration would help emphasize writing skills especially valued in the workplace. (13) One benefit that she points out, clearly along the lines of those sought by our critics, is "To help students achieve functional literacy in those communities that are relevant to their welfare and growth when they leave the university. . . ." (14)

Elizabeth Tebeaux argues that discreet courses in business writing, technical writing, science writing, and other kinds of professional writing are outmoded. Rather than specific assignments such as instructions, proposals, or feasibility studies for engineering students and memoranda, minutes of meetings, and performance evaluations for business students (which suggest that the engineer will never need to write a performance evaluation and the business major will never do a feasibility study), Tebeaux would have the basic technical writing course emphasize those common rhetorical principles that underlie the design and development of all writing, the adaptation of any communication to varying audiences, and the use of assignments which emphasize an integrated approach to communication -- team reports, for example.(15) I suggest that the courses discussed by Couture follow this more introductory course.

Dwight Stevenson in 1978 put the case somewhat differently. Technical writing, he wrote, is "a whole variety of courses distinguished from one another primarily by differences in objectives and only secondarily by differences in subject matter." Those of us trained as teachers of literature

are not accustomed to looking at different objectives for each of our courses, Stevenson suggests. (16) Stevenson's point fits in nicely with the courses described by both Couture and Tebeaux. If our objectives are indeed the same in most of our basic technical writing courses, wouldn't Tebeaux's structure suit student needs better than individual approaches which must be partial. If advanced courses must be differentiated to meet the particular needs of the many business and industrial requirements, wouldn't we do well to follow Couture and structure the course according to actual practice?

CONCLUSION

While researching the problem of literacy and curriculum development in technical writing, I came across some interesting facts which gave me some perspective on the whole issue:

--According to Robert J. Connors' "The Rise of Technical Writing Instruction in America," "Before 1870 an engineer graduated with a good bit of knowledge of the 'humane subjects.'" But with the expansion of industrial development and the introduction of new industrial materials, the humanities were rapidly cut from the engineering curriculum, leaving little except Freshman English.(17) By their own admission, "schools turned out a large number of otherwise competent engineers who were near-illiterates." (18)

--In the early 1960's, Rudolph Flesch became a household name arguing that he could tell us "why Johnny can't read."

--And in 1978, Lois DeBakey wrote that "Functional illiteracy among students and graduates is a grave concern of parents, educators, employers, and others."(19)

The problem of a workforce that writes poorly is not new then. Today we are in a better position to develop solutions because composition has become a subject for serious research. But the newness of the profession and the

variety of backgrounds that the faculty bring to the profession create other problems.

Like our curricula, our research shows a lack of agreement about where we ought to be headed. William Irmscher recently analyzed two major reviews of research in composition conducted over the past forty years. His analysis shows that as a profession, we are divided about our research methods and their usefulness. Some of us concentrate on experimental, empirical research; others on more theoretical questions. To one group of scholars, "much of the research on composition lacks rigorous procedure: the research "does not deal with a data set concerned with some aspect of written composition in a systematic way." To others, "not exclusively our literature compatriots, it lacks rigorous thought. . . . . Reason and experience--those most indispensable tools of intellectual progress in any field are insulted and ultimately weakened when we run to the laboratory for proof of the obvious."(20) Irmsher argues that better research will win us greater respectability within the academic community. I believe that a clearer understanding of purppose and need will help us toward the same goal.

To return to where I started: there is a serious literacy problem across the country. Technical writing curricula show that individual instructors or schools are actively and successfully addressing the problem in the geographic area immediately surrounding them, but the problem is immense. Individual efforts aren't enough.

A new response to the problem is gaining more and more attention: American business has stopped waiting on the traditional school establishment. They are doing the job themselves. The corporate school is almost as extensive as the traditional university system. We may be looking at a rearrangement of the responsibilities for educating the workforce. It's worth thinking about.

ENDNOTES

(1) In real terms, appropriations for federal student aid are up 62% since 1975; public and private college tuition and fees are up 14.5% and 29.3%, respectively. Peter Brinelow. "Are We Spending Too Much for Education?" Forbes. Vol. 138, No. 14 (December 29, 1986), 72.

(2) Nell P. Eurich. Corporate Classrooms: The Learning Business. (Princeton, NJ: Carnegie Foundation for the Advancement of Teaching, 1984), pp. 5-6.

(3) Brinelow, p. 73.

(4) Quoted in James Cook, "The knack. . . and how to get it," Forbes, Vol. 137, No. 6 (1986), 65.

(5) Helen M. Loeb. "Writing Courses in the Engineering College Curriculum," JTWC Vol. 15, No. 1 (1985), 43.

(6) Carolyn Miller. "Technical Writing Textbooks: Current Alternatives in Teaching," Technical Communication Vol. 31, No. 4 (1984), 35.

(7) Gilbert Storms, "Programs in Technical Communication" (Technical Communication, Vol. 31, No. 4 (1984), 13-20.

(8) Victoria M. Winkler and Jeanne L. Mizuno. "Advanced Courses in Technical Writing: Review of the Literature (1977-84), The Technical Writing Teacher, Vol. 12, No. 1 (Winter 1985) 33.

(9) Winkler and Mizuno, p. 42.

(10) Storms, p.15.

(11) Loeb, pp. 45-46.

(12) Loeb, p. 46.

(13) Barbara Couture. "Why an English Department Should Join with Industry in Planning," The Technical Writing Teacher Vol. 11 (Spring 1984), 167-74.

(14) Couture, p. 168.

(15) Elizabeth Tebeaux, "Redesigning Professional Writing Courses to Meet the Communication Needs of Writers in Business and Industry, College Composition and Communication, Vol. 36, No. 4 (1985), 419-428.

(16) Dwight Stevenson, "Mapping the Unexplored Area: Developing New Courses and Coherent Programs in Technical Communication," JTWC, Vol.8, No. 3 (1978), 193.

(17) JTWC. Vol. 12 , No. 4 (1982), 329.

(18) Connors, p. 331.

(19) Lois DeBakey, "Literacy: Mirror of Society," JTWC, Vol. 8, No. 4 (1978), 279-319.

(20) William F. Irmscher. "Finding a Comfortable Identity." CCC, Vol. 38, No. 1 (February 1987), 81-87.